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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,525	09/29/2003	Jih-Shin Ho	CFP-14796 (15745/408)	1837
23595	7590	05/18/2006	EXAMINER	
NIKOLAI & MERSEREAU, P.A. 900 SECOND AVENUE SOUTH SUITE 820 MINNEAPOLIS, MN 55402			EISEN, ALEXANDER	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/673,525

Applicant(s)

HO, JIH-SHIN

Examiner

Alexander Eisen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Fuse, US 5,229,761.

With respect to claim 1 Fuse discloses a method for driving a liquid crystal display device (FIG. 1) involving the generation of  $N+1$  levels of output voltage, comprising the steps of defining a minimum voltage as base voltage  $V_0$  ( $V_5$  in FIG. 2); defining a maximum voltage as high voltage  $V_N$  ( $V_0$  in FIG. 2); defining all voltage levels among voltage levels to-be-established  $V_1$  through  $V_4$ , other than the base voltage and the high voltage; generating any voltage level among voltage levels to-be-established basing on using the high voltage, and then defining a new voltage as an established voltage level; generating any voltage level among voltage levels to-be-established basing on the base voltage  $V_0$ , the high voltage, and all previously established voltage levels, and then defining the new voltage as an established voltage level; wherein, the established voltage level is always used as the base voltage for establishing the next voltage in voltage levels to-be-established; the voltage difference  $dV$  between any two adjacent voltage levels is always a constant value, from the base voltage to the  $((N + 1)/2 - 1)^{\text{th}}$  voltage level, and from  $((N + 1)/2)^{\text{th}}$  voltage level to the high voltage ( $V_N$ ) (FIGS. 1-2; col. 1, line 19 – col. 2, line 63).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuse in view of Ito, US 5,859,632.

Fuse discloses all the limitations of claim 2 except that all the established voltage levels are totaled up to six ( $N+1=6$ ); the voltage levels  $V_0 - V_5$  are arranged in order from the lowest to the highest; and the voltage difference  $dV$  between any two adjacent voltage levels shall satisfy the conditions:  $V_5-V_4=V_4-V_3=V_3-V_2=V_2-V_1=V_1-V_0=dV$ .

Ito teaches generating voltages for driving the display device and satisfying the required condition (col. 1, ll. 25-43).

It would have been obvious to one of ordinary skill in the art at the time when the invention was made to improve the Fuse with Ito by combining the two references in order to obtain the required number of the voltage levels in driving LCD taught by the latter.

***Allowable Subject Matter***

5. Claims 3-6

6. are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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7. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art, either singularly or in combination, teach or fairly suggest the method steps as claimed by dependent claims 3-6; namely none of the art has been found to teach generating voltages for driving the display devices, wherein when the base voltage (V0) has a zero value: the second voltage (V2) is obtained from the high voltage (V5); the first voltage (V1) is obtained by having the second voltage (V2) divided by two; the fourth voltage (V4) is obtained by having the high voltage (V5) subtracted by the first voltage (V1); and the third voltage (V3) is obtained by having the high voltage (V5) subtracted by the second voltage (V2), or wherein when the base voltage (V0) has a zero value: the first voltage (V1) is obtained from the high voltage (V5); the second voltage (V2) is obtained by having the first voltage (V1) multiplied by two; the fourth voltage (V4) is obtained by having the high voltage (V5) subtracted by the first voltage (V1); and the third voltage (V3) is obtained by having the high voltage (V5) subtracted by the second voltage (V2), or wherein when the base voltage (V0) has a zero value: the third voltage (V3) is obtained from the high voltage (V5); the second voltage (V2) is obtained by having the high voltage (V5) subtracted by the third voltage (V3); the first voltage (V1) is obtained by having the second voltage (V2) divided by two; and the fourth voltage (V4) is obtained by having the high voltage (V5) subtracted by the first voltage (V1), or wherein when the base voltage (V0) has a zero value: the fourth voltage (V4) is obtained from the high voltage (V5); the first voltage (V1) is obtained by having the high voltage (V5) subtracted by the fourth voltage (V4); the second voltage (V2) is obtained by having the first voltage (V1) multiplied by two; and the first voltage (V1) is obtained by having the high voltage (V5) subtracted by the second voltage (V2).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is (571) 272-7687. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexander Eisen  
Primary Examiner  
Art Unit 2629

12 May 2006